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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/583,966	05/31/2000	Robert A. Hall	M-8202 US	2311
33031	7590	11/09/2004	EXAMINER	
CAMPBELL STEPHENSON ASCOLESE, LLP 4807 SPICEWOOD SPRINGS RD. BLDG. 4, SUITE 201 AUSTIN, TX 78759			LIN, WEN TAI	
			ART UNIT	PAPER NUMBER
			2154	

DATE MAILED: 11/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/583,966

Applicant(s)

HALL ET AL.

Examiner

Wen-Tai Lin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 10-14, 16, 18-31, 34, 35, 38-40, 42, 44, 45, 47, 49, 50, 52, 54, 55 and 57 is/are rejected.
- 7) ☒ Claim(s) 48, 51 and 56 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

1. Claims 1-58 are presented for examination.
2. The text of those sections of Title 35, USC code not included in this action can be found in the prior Office Action.
3. The drawing objection made in the previous two office actions is withdrawn because the stated conflicts have been removed by applicant's amendment of the specification by defining the "almost full" and "almost empty" buffer statuses to be "a selected number of slots" away from being completely full and "a selected number of slots" away from being completely empty, respectively.

### ***Claim Rejections - 35 USC § 112***

4. Claims 1-43 and 46, 52-53 and 57-58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctively claim the subject matter which applicant regards as the invention.
  - (i) As to claims 1-43, 46, 52-53 and 57-58, it is unclear how the structure of the so called "non-standard SONET frame" or "transport gap other than the standard transport gap" is different from that of a standard STS-9 frame (i.e., STS-N with N=9). Specifically, throughout the specification Applicant uses frame 204 and 206 of

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Figs. 2-4 as illustration of a non-standard SONET frame. However, a closer look reveals that frame 204 or 206 is in fact equivalent to a row of the conventional standard STS-9 SONET frame because the latter also contains 27 overhead bytes followed by 783 bytes of payload. The slight variation in the arrangement of the payload of frame 204 or 206, which extends into 8 other consecutive 90-byte rows, does not make any difference to that of a STS-9 frame from the receiving buffer's or transmitting buffer's point of view. That is, in real-time data streaming 9 consecutive 204 frames are equivalent to one complete STS-9 frame. As such, whatever mechanism devised for the 204 frames would also works with the STS-9 frames. Since the specification has not taught any other form of "non-standard" SONET frame, it is held that the terms "non-standard SONET frame" and "transport gap other than the standard transport gap" are indefinite.

(ii) As to claims 31-38, it is unclear what is meant by "the number of columns present in a non-standard SONET transport gap"? Specifically, using the arrangement of frame 204 as example: there are 9 rows in each column, but only 9 columns containing transport overhead in its first row. That is, to qualify a column as such, it is not clear whether the underlying column only needs to contain one transport overhead element or be totally filled with the transport overhead elements?

(iii) As to claims 41, 46, 53 and 58, the clause "when the non-standard transport gap is twenty-seven columns of data in size" appears to require the entire column be

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filled with non-standard transport overhead information, but in reality frame 204 and 206 of Figs. 2-4 each includes 9 rows in a column, but only one transport overhead element is enlisted in the first row of the first 27 columns. That is, "twenty-seven columns of data in size" is misleading because by default it would require 27 times 9 elements of transport overhead in each of the 204 or 206 frames. Note that when it comes to qualifying the three columns of standard transport gap (such as those in claims 43, 48, 51 and 56), the entire column is filled with transport overhead information in accordance with frame 108 and 110 of Figs. 1-4. The fact that the same term may carry different meaning in the claim languages has rendered the word "column" indefinite.

***Claim Rejections - 35 USC § 102***

5. Claims 44, 49 and 54 are rejected under 35 U.S.C. 102(a) as being anticipated by AAPA [Applicant Admitted Prior Art].
6. As to claims 44, 49 and 54, AAPA teaches the invention as claimed including: a system for maintaining communications comprising:
  - means for detecting a transition involving at least one SONET frame;
  - means, response to said detecting yielding a determination that a receive FIFO buffer is almost full during the transition involving at least one SONET frame, engaging in negative stuffing; and

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- means, response to said detecting yielding a determination that a receive FIFO buffer is almost empty during the transition involving at least one SONET frame, engaging in positive stuffing [Specification: page 2, paragraph 2].

***Claim Rejections - 35 USC § 103***

7. Claims 1-6, 8, 10-14, 16, 18-31, 34-35, 38-40, 42, 45, 47, 50, 52, 55 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA [Applicant Admitted Prior Art].
8. As to claims 1-2, 18-19 and 25, AAPA teaches the invention substantially as claimed including: a method for determining buffer status, by keying a transmitting or receiving buffer status [i.e., almost full or almost empty statuses of a transmitting or receiving buffer] to the standard transport gap of a SONET frame [Specification: page 2, paragraph #2] including that of a STS-9 SONET frame [Specification: page 3, paragraph #3; note that Fig.1 is also regarded as a prior art, wherein buffer 104 may be used as a transmitting or receiving bufer].

AAPA does not specifically teach keying a buffer status to a transport gap other than a standard SONET transport gap. However, since the only non-standard SONET frames illustrated in Applicant's Figs. 2-4 are in fact equivalent to a row of the standard STS-9 SONET frame, it is obvious to one of ordinary skill in the art that AAPA's keying technique could also be applied to the illustrated

non-standard SONET frames because from the receiving buffer's or transmitting buffer's point of view, 9 consecutive non-standard SONET frames are equivalent to one STS-9 frame.

9. As to claims 3, 11, 20 and 26, AAPA teaches that the transmit buffer is interposed between a pointer interpreter which [212, Fig.5] and a pointer generator [216, Fig.5] which prepares a standard SONET STS-N frame [see Fig.1]. AAPA does not specifically teach that the source of the pointer interpreter is a switching matrix.

However, since the buffer is associated in a SONET node, which is situated in a network environment, it would have been obvious to one of ordinary skill in the art to recognize that AAPA's transmitter buffer data could be applied after a switching matrix because it is nominal to have switching matrix (such as routers) interposed between various network nodes.

10. As to claims 4-6, 8, 12-14, 16, 21-24 and 27-30, AAPA does not specifically teach how to qualify the almost-full and almost-empty buffer statuses [i.e., in terms of how many slots or columns away from being completely full or being completely empty] and the width (in terms of byte) each column. However, by the context of the terminology "almost-full" and "almost-empty", it is clear that the "almost-full" and "almost-empty" buffer statuses must be defined at least one column length of a transport gap away from being completely full or completely

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empty, respectively [see also Applicant's amended specification at the fourth paragraph on page 3 and the last paragraph on page 9, wherein "a selected number" or "a set number" is being interpreted as any positive number].

As for the column width of each column, AAPA teaches that an STS-N frame is normally organized to have N bytes as the column width. However, when it comes down to hardware implementation, it is well known that the number of bytes per column width is simply a design choice.

In view of the equivalence between Applicant's non-standard transport gap and that of a standard STS-9 transport gap, it is obvious to one of ordinary skill in the art that AAPA's design of the buffer [as shown in Fig.1] and its associated almost-full and almost-empty statuses could also be applicable to the transmit and receive buffers associated with Applicant's non-standard transport gap.

11. As to claim 39, AAPA teaches the invention substantially as claimed in the context of a standard STS-9 SONET frame. AAPA does not specifically teach detecting a transition involving at least one non-standard SONET frame. However, in view of the similarity between the STS-9 frame and Applicant's non-standard SONET frame, it is obvious to one of ordinary skill in the art that the positive and negative stuffing devised for performing the transition of an STS-9 frame can also be made applicable to that of Applicant's non-standard SONET frame because from the data streaming point of view, 9 consecutive non-standard SONET frames are equivalent to one STS-9 frame.



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12. As to claims 31, 34, 35, 38, 40, 42, 45, 47, 50, 52, 55 and 57, since the features of these claims can also be found in claims 1-6, 8, 10-14, 16, 18-30, 39, 44, 49 and 54, they are rejected for the same reasons set forth in the rejection of claims 1-6, 8, 10-14, 16, 18-30, 39, 44, 49 and 54 above.

13. Claims 7, 9, 15, 17, 32-33, 36-37, 41, 43, 46, 48, 51, 53, 56 and 58 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office Action and to include all of the limitations of the base claim and any intervening claims.

14. Applicant's arguments filed on 9/20/2004 for claims 1-6, 8, 10-14, 16, 18-31, 34-35, 38-40, 42, 44-45, 47, 49-50, 52, 54-55 and 57 have been fully considered but are moot in view of the new ground of rejections.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen-Tai Lin whose telephone number is (571) 272-3969. The examiner can normally be reached on Monday-Friday(8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(703)872-9306 for official communications; and

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(703)746-5516 for status inquires draft communication.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Wen-Tai Lin

November 1, 2004

Wen-Tai Lin  
11/1/04